
Developing the Public Sector Capabilities Index: Phase I synthesis report, September 2023 to May 2024

The report is written by the IIPP Public Sector Capabilities Index team

July 2024



Institute for Innovation
and Public Purpose

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synthesis report, September 2023 to May 2024**

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1. Introduction

The Institute for Innovation and Public Purpose (IIPP) is working with Bloomberg Philanthropies to develop a new Public Sector Capabilities Index. This index will be a global measure of where city government capabilities are strong and where critical skills must be built up. We will launch the first iteration of the Public Sector Capabilities Index in May 2025.

To create the Public Sector Capabilities Index, we have divided our primary and secondary research into distinct phases. The phases are cumulative and reflective, with the intention that we will reflect upon, refine and sharpen our conceptualisations and understanding of dynamic capabilities as we engage more city governments and their wider stakeholders.

This paper synthesises the findings from our research during September 2023 to May 2024. It builds upon the scoping interviews and literature review we conducted from September to December 2023 to develop our conceptualisations of dynamic capabilities (see Kattel et al. 2024). Through in-depth qualitative interviews, and reviewing academic and policy documents, we have generated five case studies on dynamic capabilities in city governments. Our five city government case studies are: Barcelona City Council, Bogotá City Council, Freetown City Council, Seattle City Council and Seoul Metropolitan Government. To date, our research has taken an abductive and interpretive approach to understanding the dynamic capabilities of city governments. The methods deployed have included academic and grey literature reviews, as well as qualitative interviews with city government officials, academics and wider experts. For a full discussion of our methodology, see Annex 1.

While dynamic capabilities have been increasingly used in the last decade to analyse the ability of the public sector to adapt to new societal challenges, there is no established consensus on the number of dynamic capabilities (how many can be identified) or their content (what they are about). Drawing on and comparing different options in extant literature (Wolfram 2016; Meijer 2019; Mayne et al. 2020; Kattel 2022; Spanó et al. 2023), we started with the following five capabilities (Kattel et al. 2024):

1. **Sense-making (system awareness):** the ability to scan and make sense of the strategic environment in which a public organisation operates to analyse opportunities and threats.

2. **Connecting (policy coordination):** the ability to coordinate the functions performed by a public organisation and connect them with its external environment.
3. **Seizing (action as experimentation):** the ability to take advantage of new opportunities within a public organisation's external environment.
4. **Shaping (transforming contexts):** the ability to change a public organisation's internal resources in view of changes in the external environment.
5. **Learning (organisational learning):** the ability to control and manage how the routines developed by a public organisation are monitored, assessed and ultimately discarded or institutionalised.

Our key findings

1. Conceptualisations of dynamic capabilities

- The comparative analysis of five city governments has enabled us to refine 'our' understanding of the five dynamic capabilities. While there are significant alignments between our initial conceptualisation of dynamic capabilities and case study observations, going forward we will refine and forge a common vocabulary for dynamic capabilities – with the help of civil servants too – to bridge the gap between theory and practice.
- One of the major lessons from the city case studies is that dynamic capabilities are often embedded and in interaction with organisational routines. Our research shows that both dynamic capabilities and routines are not neatly mapped into city departments, but are rather distributed, often unevenly, across different departments. Going forward we propose to develop our understanding of organisational routines and their linkages with dynamic capabilities.

2. How city government capabilities are developed

- Political leadership is critical to setting the strategic direction for deploying dynamic capabilities. The ability to recruit and retain talent can be a challenge affected by both structural and economic factors.

- City governments emphasise the need to carefully manage relationships with other governments at the city, state and national level. Furthermore, internal capabilities are often developed with the support of external organisations, including philanthropy, and development banks.
- International collaborations are often a key asset in supplementing a lack of stable source revenue and building capacity, but come with challenges. Gaining international support requires extensive coalition-building work, which can drain limited internal resources. At the same time, it also exposes project implementation to disruptions if the funding stops.

3. How city dynamic capabilities could be assessed and measured

- The measurement of dynamic capabilities is challenging. Dynamic capabilities are themselves routines of organisational and managerial renewal, and as such are necessarily transversal, cutting across and recursively influencing both state capacity and organisational routines. Considering the close conceptual interrelation of these analytical dimensions, measurement of dynamic capabilities may greatly benefit from the measurement of the inextricably linked concepts of state capacity and organisational routines.
- We will continue to iteratively and inductively develop the city government typology based on our engagement with cities and city practitioners to expand the representativeness of our sample of cities engaged in our research. In the longer term we will converge our measurement approach and typology to provide a sense-making context to the assessment.

4. Usability of a Public Sector Capabilities Index

- There is considerable interest from city governments in a tool to help them reassess their ways of working and strengthen their ability to deliver against current societal challenges.
- We have learned that city governments want to learn from each other, steering our efforts towards shaping an Index that promotes collaboration rather than competition.
- We have also identified what would make such a tool useful to them. It needs to be accessible with political and administrative buy-

in. The Public Sector Capabilities Index must go beyond ranking to provide city governments with a road map for improvement. This will enable city governments to invest in developing their capabilities and help leverage external sources of support.

Next steps

The insights gathered so far are helping us design the next phase of our research and index development. From June to October 2024, we will deepen our engagement with city governments, while also bringing in relevant officials from regional, state and national governments, as well as other external partners and funders. Underpinning this is the development of the user journey, which will help to develop conceptualisations of dynamic capabilities that resonate with city governments, further our measurement approach and refine our engagement strategy.

This paper is structured as follows

1. How city governments define and deploy capabilities
2. How dynamic capabilities are developed in city governments
3. How dynamic capabilities could be assessed and measured
4. The usability of the Public Sector Capabilities Index
5. City government typology
6. Reflections and implications for our work
7. Annex 1: Our methodological approach

2. Towards an operative definition of dynamic capabilities

Conceptualising dynamic capabilities

Building on extant literature on strategic management (Teece et al. 1997), our research started from the assumption that dynamic capabilities can be defined as 'abilities embedded in routines that enable organisations to adapt their resources, processes and skills in response to an evolving strategic environment.' While dynamic capabilities have been increasingly used in the last decade to analyse the ability of the public sector to adapt to new societal challenges, we have acknowledged that there is no established consensus on the number of dynamic capabilities (how many can be identified) or their content (what they are about).

Drawing on and comparing different options in extant literature (Wolfram 2016; Meijer 2019; Mayne et al. 2020; Kattel 2022; Spanó et al. 2023), we started with the following five capabilities (Kattel et al. 2024):

1. **Sense-making (system awareness):** the ability to scan and make sense of the strategic environment in which a public organisation operates to analyse opportunities and threats. This involves strategic and analytical thinking to discern potential challenges; potential opportunities; and political leverage.
2. **Connecting (policy coordination):** the ability to coordinate the functions performed by a public organisation and connect them with its external environment. This involves vertical coordination among leadership and frontline staff; horizontal coordination among departments within the organisation; and inter-organisational coordination.
3. **Seizing (action as experimentation):** the ability to take advantage of new opportunities within a public organisation's external environment. This involves strategic investment and allocation of (non-)monetary resources; decision-making procedures to avoid bias and encourage innovation; and stakeholder management.
4. **Shaping (transforming contexts):** the ability to change a public organisation's internal resources in view of changes in the external

environment. This involves management and prioritisation of stable financial funds; insourcing and outsourcing of key personnel, goods, projects and processes; and management, reskilling and reshaping of personnel.

- Learning (organisational learning):** the ability to control and manage how the routines developed by a public organisation are monitored, assessed and ultimately discarded or institutionalised. This involves politico-administrative learning; politico-economic learning; and techno-economic learning.

Deploying dynamic capabilities

The five city government case studies we have produced between December 2023 to May 2024 have helped us maintain a critical distance from this initial, theory-driven understanding of dynamic capabilities and observe how some of the most innovative local administrations in the world conceptualise and deploy dynamic capabilities in practice. Table 2 is the foundation for the insights in the rest of this section and informs our update of the original conceptualisation.

Table 2. Comparing how cities conceptualise and deploy dynamic capabilities

CAPABILITY	BARCELONA	BOGOTÁ	FREETOWN	SEATTLE	SEOUL
Sense-making	Across policy domains (housing, data, public sector innovation) key role in providing support to the city ecosystem and developing a strategic vision based on the insights gathered	Political leadership to set priorities, engaging residents and political actors in sustained dialogue, and building structures to deliver on such priorities (e.g. Public Innovation Lab and Agata)	Strong commitment to elicit and incorporate citizens' needs within FCC priorities. Strong effort in data gathering and analysis regarding real-time monitoring of projects through yearly reporting	Understanding and serving citizen needs. Deep and data-driven analysis often used to identify the 'root causes' of complex issues (e.g. youth mental health) and anticipate problems	Digital platforms play a critical role in empowering the city administration to understand citizens' needs and promote data sharing
Connecting	Creating interlinkages between public tasks (social services, urban planning, housing), and bringing in both private and third-sector actors, to increase delivery capacity across the whole city	Developing domestic collaborations with grassroots organisations, the private sector and the national government, as well internationally with philanthropies, development banks and others	Continuous need to close financial gaps from development donors. In terms of delivery, working with national ministries is more difficult than working with city stakeholders	Includes internal restructuring and data sharing; inter-regional work for wider societal issues; and partnerships with private, research and philanthropic organisations to close capacity and funding gaps	Exerting thought and policy leadership in the global field of 'smart cities' – including through external partners – as highlighted in the administration's Smart Vision 2030
Seizing	Seizing on available legislative provisions, strategic frameworks and cross-functional collaboration to steer decision-making on major policy goals	Demonstrable track record of leveraging additional funds from said partnerships. Forming coalitions for policy deployment (e.g. Care Blocks)	Considerable policy innovation in both design and delivery in terms of the ability to push for behavioural, infrastructural and technical change	Optimising current services and tackling new needs. Both are tied to partnerships with external actors bringing innovation in funding and skills	Nurturing a strong startup and financial sector ecosystem to attract businesses to the region, while at the same time ensuring 'fair competition'
Shaping	Transforming interaction with private operators and markets altogether via partnerships, data sovereignty clauses and open intellectual property rights	New teams and public units that are tasked with innovation, data-driven government and delivery by shaping internal procurement mechanisms	Reforming key administrative tasks, such as the revenue mobilisation process and its integration with a participatory budgeting system	Ensuring that teams across departments have the resources and capabilities they need to carry out projects cascaded down from the mayor's office	Hard to ascertain based on available data gathered via correspondence
Learning	Mixed success with respect to embedding more effective routines beyond the most innovative units	Becoming a 'data-driven city' and ensuring positive impact for residents, but no routinisation	Creation of new roles dedicated to capacity building both in key policy areas and across government	Focus on 'attitudes' and 'mindsets' for continuous service betterment, including by taking risks	Emphasis on academic models of learning and data collection to inform evidence-based policy making

Relative to our initial definition of **sense-making**, the five city case studies show a high degree of convergence in their emphasis on data-driven analysis as a key asset to identify root causes of challenges (Seattle) and their focus on real-time monitoring and regular reporting (Barcelona, Freetown). On the other hand, divergence is more apparent with respect to the cities' greater emphasis on the role of political leadership in priority setting and of citizens' needs as a key focus of analysis (Seoul). Together, these stress how successful sensemaking demands to be at the same time embedded into a political vision and grounded in citizens' perspectives.

Our initial definition of **connecting** overlaps with cities' understanding of the critical role played by the creation of horizontal and vertical interlinkages between public tasks and various policy arenas (Barcelona), and by inter-organisational collaboration, including with grassroots organisations and international entities (Bogotá, Freetown, Seoul). At the same time, cities also emphasise how this dynamic capability is dependent on the ability of the administration to pursue internal restructuring processes which go beyond mere coordination among silos (Seattle).

In terms of **seizing**, we observe strong convergence between, on the one hand, our understanding of this dynamic capability as a need for experimentation in developing new solutions and, on the other hand, cities' activism in building on volatile combinations of resources and opportunities to do so. This is apparent both in those cities with the ability to forge coalitions for policy development and leverage sources of funding (Bogotá, Seoul), and those where innovation aims at improvements in service delivery (Barcelona, Seattle). However, experimentation can also have drawbacks, for example, when it is a necessity rather than a choice due to financial constraints (Freetown).

Similarly, our definition of **shaping** reflects that transforming their operating environment is essential for cities to achieve their strategic goals. This is apparent with respect to the formation of new teams and units devoted to strategic innovation (Bogotá, Freetown), as well as to the reform of key administrative processes, including, for example, revenue mobilisation and fiscal management (Seattle, Freetown). However, our definition does not yet account for the external-facing dimension of such transformation, for instance, 'market-shaping' as enacted through cities' legal instruments and regulatory prowess (Barcelona).

Finally, our initial definition of **learning** seems to be reflected not only in the commitment of city governments to embed innovative ways of working into

organisational routines, but also in the challenges encountered in doing so. Administrative and technical learning are prominent in those cases where new cross-functional roles and teams (Seattle) or data-driven tools (Bogotá, Seoul) are consolidated in everyday policymaking. On the other hand, political learning seems to serve as a major enabler of such forms of learning (Freetown), albeit its high vulnerability to electoral cycles may limit its long-term sustainability (Barcelona).

Deepening our understanding of dynamic capabilities

All considered, our initial definition of dynamic capabilities successfully helped highlight different facets of the challenges faced by the five cities in our sample towards developing new solutions to pressing societal challenges. At the same time, the comparative analysis yielded relevant insights that can help us 'upgrade' our understanding of the five dynamic capabilities in our framework:

- In terms of **sense-making**, the need for a more explicit connection with agenda-setting, both in terms of political leadership and citizens' needs.
- In terms of **connecting**, the need for a clearer distinction between whole-of-government coordination and internal processes of organisational restructuring.
- In terms of **seizing**, the need for a clearer definition of the drivers, rationales and tools that underpin effective policy experimentation.
- In terms of **shaping**, the need for a more explicit distinction between the transformation of the (internal) organisational context and the (external) socio-economic context.
- In terms of **learning**, the need for both a clearer identification of its key facets (political, administrative, technical) and the explicit articulation of mutual relationships.

Looking beyond our own framework, the analysis also highlighted critical insights on how cities themselves envision dynamic capabilities. Here we highlight five:

- **Fragmentation:** Case studies show that the implementation of dynamic capabilities is fragmented not only across cities, but also across different sectors in the same city.

- **Language:** Case studies show that, while most civil servants have an intuitive sense of dynamic capabilities, they have no shared or standardised language to talk about them.
- **Tangibility:** Case studies show only vague understanding of the connections between dynamic capabilities and organisational routines, hinting at the need for more tangible definitions.
- **Coherence:** Case studies also show that, at a granular level, the team has not yet forged a shared understanding of dynamic capabilities themselves, thus calling for their reappraisal.
- **Context specificity:** Case studies show that variability in cities' context and objectives is relevant to the definition of dynamic capabilities – the definition of which should therefore strive for a middle ground between contrasting needs for granularity and versatility.

Overall, while there are significant alignments between our initial conceptualisation of dynamic capabilities and case study observations, important nuances and divergences in meaning should be considered when trying to increase the resolution of our definition with context-specific differences in the practical implementation of dynamic capabilities. Moving forward our ability to refine and forge a common vocabulary for dynamic capabilities – possibly with the help of civil servants too – will be key to enhancing our understanding of dynamic capabilities and bridging the narrowing but persistent gap between theory and practice.

One of the key lessons from the case studies is that dynamic capabilities are often embedded and in interaction with organisational routines. We have previously shown (Kattel et al 2024) that conceptually there are five categories of organisational routines relevant to city governments: analytical, planning, coordination, evaluation and participation. However, our research shows that these routines are not neatly mapped on to city departments, but are rather distributed, often unevenly, across different departments. The same can be said about dynamic capabilities: they rarely sit in only one department or team in city governments. In addition, it became clear that some of the key routines were not obvious in our analytical categorisation. For instance, digital routines seem highly relevant in all cases. Similarly, budgeting and procurement emerged as a key routine, as did infrastructure and spatial planning.

Accordingly, we propose to develop further the organisational routines and their linkages with dynamic capabilities along the following lines:

- Analytical and evaluation routines can be combined into **monitoring, evaluation and learning (MEL) routines**, which are often linked with sense-making and learning dynamic capabilities.
- Coordination and participation routines can be joined into **orchestrating routines**, which are linked with connecting dynamic capabilities.
- Planning should be combined with budgeting routines into **policy planning, budgeting and procurement routines**, which are linked with seizing and shaping dynamic capabilities.
- **Digital routines** should be added, which are linked with all dynamic capabilities.
- In addition, we could expect that **infrastructure and spatial planning routines** are relevant and linked with sense-making, seizing and transforming dynamic capabilities.

These can be seen as hypotheses to be tested in the next phase of research. Another key cluster of research questions centres around how the organisational routines and linked dynamic capabilities interact with broader state capacities. For instance, if a city operates in a country with a strong and long-standing civil service system that includes city officials, we can expect this capacity to interact with organisational routines and dynamic capabilities. Similarly, if a city operates in a constitutional framework that allows it to raise revenue through taxes, this is likely impacting its budgeting and planning routines, and so forth.

3. How dynamic capabilities are developed

Across all five city governments, city government capabilities are developed with both internal resource and external input.

Staffing and political leadership

Within city hall, staffing and human capital are essential. Political leadership is critical to setting the strategic direction for deploying dynamic capabilities. There is then a need for administrative leadership and staffing to be equipped to deliver this vision. For Bogotá City Council and the other city governments, this requires the ability to recruit and retain high calibre staff. In Barcelona City Council, capabilities are developed by a mix of leveraging internal talent, providing training to re-skill employees, engaging external talent and reorganising key institutional structures. As an example, in its housing policy, Barcelona hired people with housing expertise on professional service contracts, sometimes from academia, and then incorporated them into the organisational structure.

The ability to recruit and retain talent can be a challenge affected by both structural and economic factors. For example, in Freetown City Council a lack of stable sources of income represents a major hindrance to capacity and capability building. It means that Freetown City Council cannot offer incentives to reward performance and motivate staff, and it means that salaries have not always kept up with inflation, making public sector jobs less appealing. In Barcelona, the Mayor's Development Office has struggled to attract skilled recruits owing to the city's stringent HR regulations and less competitive salaries compared to the private sector. Another staffing issue that potentially negatively impacts the ability to deliver is the limit to the mayoral term. In Bogotá City Council, the four-year mayoral term with no re-election has important implications for developing and sustaining capabilities and institutional knowledge. As an example, to avoid bureaucratic hiring rules and processes, and ensure trusted experts (often of the same political persuasion) are recruited, advisors are often hired as contractors, not as civil servants. This means that their contracts end at the end of the four-year term. The same goes for the Delivery Unit de Bogotá. As it was never formally included in the city council's organigram it was disbanded at the end of Mayor Lopez's four years.

External partners

Internal capabilities are often developed with the support of external organisations, including the involvement of national government, philanthropy and development banks. Across all the city governments, there is a considerable emphasis on the need to carefully manage relationships with other government organisations at the city, state and national level. In the City of Seattle, this requires clear division of funding and responsibilities. For Bogotá City Council, the national government plays a pivotal role in many policy areas. For example, when developing its digital capabilities, the national Ministry of ICT decrees digital policy and the Bogotá City Council works to implement it. Another policy area that involves the national government and sometimes has the attention of the president is large-scale infrastructure projects, such as the creation of a metro system in Bogotá. According to Luz Medina, Directora Distrital de Relaciones Internacionales, Bogotá City Council, the involvement and role of the national government varies, as does the nature of the relationship, and she says, 'Different topics have different dynamics,' often influenced by the prominence of the topic in the media and public debate. However, the relationship is symbiotic, because, as she notes, 'Bogotá is 25% of the GDP of Colombia, so it's important that Bogotá performs well for the country to perform well.'

Beyond government, philanthropy, academia and the private sector can play important roles. For example, in Barcelona City Council, BIT-Habitat, a non-profit based in Barcelona, provides training for civil servants and aims to reduce the government's reliance on external consultants. In the City of Seattle, partnership opportunities with academic institutions, tech companies and philanthropies are key to the success of projects like Affordable Seattle by helping to plug capacity and funding gaps. Seoul Metropolitan Government forges international collaborations and develops private sector partnerships.

Philanthropy and development banks

In all the city governments, philanthropy acts as a partner in capability-building. As an example, Bogotá City Council has been supported to develop its data capabilities through its involvement in Bloomberg Philanthropies' What Works Cities programme. The city council is also involved in other capability-building programmes, including the Harvard Bloomberg Cities

Leadership Initiative and Bloomberg Philanthropies' Global Mayors Challenge. Through these programmes, philanthropic funding is playing a crucial role in developing the capabilities and enabling the conditions for public sector innovation, and the use of data to help with policy development and problem solving.

In the two cities in our sample from the global south – Bogotá City Council and Freetown City Council – development banks play a key role in building the city government's capabilities. For Bogotá City Council, this includes the CAF – Development Bank of America and the Inter-American Development Bank. In Freetown City Council, the lack of stable source revenue is supplemented by development aid through global organisations, alongside national development agencies or foundations.

Challenges in partnership development

International collaborations are often a key asset in supplementing a lack of stable source revenue and building capacity, but the solution comes with its own challenges. Gaining international support requires extensive external-facing and coalition-building work, which can drain limited internal resources away from the short-term challenges faced by the city. At the same time, it also exposes project implementation to discontinuities and disruptions if the funding stops. This was identified in Freetown City Council when the withdrawal of international funding for the construction of six waste treatment plants stalled the initiative. Furthermore, this funding can be limited to funding projects rather than staff, and if resourcing is time-limited it can impact the sustainability and longevity of the capabilities it helps foster.

4. How dynamic capabilities could be assessed and measured

Literature concerning the measurement of dynamic capabilities is scant (Kattel 2022). The empirical assessment of dynamic capabilities is challenging, not least due to their inherently inconstant and tacit nature (Kattel and Takala 2021). Crucially, dynamic capabilities are themselves routines of organisational and managerial renewal, and as such are necessarily transversal, cutting across and recursively influencing both state capacity and organisational routines.

Considering the close conceptual interrelation of these analytical dimensions, substantive integration in the methodological context could be effective in properly topicalising dynamic capabilities as routines to allow for rigorous assessment. That is: the measurement of dynamic capabilities may greatly benefit from the measurement of the inextricably linked concepts of state capacity and organisational routines.

This section summarises our current thinking on weighing various ways of measuring and assessing capabilities. Here, we look at, first, how various levels of capacities and capabilities have been and could be assessed, and, second, offer an overview of various potential ways to assess dynamic capabilities specifically. Over the next months, we will experiment with these options.

Quantitative measurement: state capacity

The constituent elements of state capacity – bureaucratic structures, legislation, the ability to raise and deploy financial resources, and autonomy – are conducive to measurement through the aggregation and assessment of secondary quantitative data. However, there is no consensus on how state capacity should be assessed.

Cingolani (2018) notes significant variation in the dimensions of state capacity emphasised across studies (e.g. coercive or military, fiscal, administrative, legal, infrastructural) and greater variation in approaches to the measurement of said dimensions. Vacarro (2023), in evaluating the convergent validity and interchangeability of seven often-used measures of state capacity (Quality of Government Index, State Capacity Index,

Government Effectiveness, State Fragility Index, Fragile States Index, Corruption Perceptions Index, Rigorous and Impartial Public Administration), finds that measures are strongly correlated, but interchangeability between measures is weak.

It need not be problematic that state capacity is multidimensional, but this does imply that assessment is unlikely to produce useful outputs if measurements do not strongly reflect state capacity conceptualisation and definition. Thus, theoretical alignment between definitions and measures of state capacity is crucial, and quantitative measures of state capacity are made more robust by reducing the salience of the sensitivity of results to chosen measures. Accordingly, dimensions of state capacity, and their contingent variables and indicators, will closely match our conceptualisation of the idea (Kattel et al. 2024).

A modular measurement approach: organisational routines and dynamic capabilities

In the public sector, organisational routines – typologised as analytical, planning, coordination, evaluation, policy and participation – sit within formal and informal organisational ‘tasks’. Becker (2008) analogises organisational routines to conventions, norms, traditions and folkways, noting that routines are fundamentally rooted in the Weberian conception of order as ‘a prescription for how to act, that is “exemplary” or “obligatory”’ (Becker 2008; Weber 1978).

As such, organisational routines catalogue stable organisational functions. Thus, the goal of measurement is to interrogate our established, generic, abstract routines in city governments to locate concrete, routinised practices. Meijer (2019) is instructive in the measurement of such routines, asking non-outcome-based survey questions (e.g. ‘City X has a strong structural network of companies, researchers and citizens connected to data-driven innovation’) to assess public innovation capacity in Utrecht (note that Meijer’s self-assessment instrument does include both outcome- and routine-based questions).

However, dynamic capabilities are the locus of adaptability and act as critical junctures of change in stable routines. As such, it would be difficult to assess these through either objective observation of organisational functions and practices, or purely through output and outcome. Outcome-

focused approaches are often employed in the measurement of dynamic capabilities. Here, outcomes are themselves taken as proxies for the presence of dynamic capabilities. This means that, while the goal of such studies is to determine if, how and which dynamic capabilities have been responsible for success, their existence is determined through the same success and the direction of measurement, though this is implicit, implies contingency on success. This is tautological (Kattel 2022; Laaksonen and Peltoniemi 2018).

Alternatively, we propose that dynamic capabilities be measured through a modular measurement approach encompassing three groups of information: i) routines and practices measured through a ‘criteria-based’ survey; ii) institutional culture and other subjective values behind dynamic capabilities measured through a ‘perceptions-based’ survey; and iii) capabilities revealed through measurable outcomes (proxies) measured by leveraging secondary data sources, including governance indexes and indicators.

It is important to note that we are actively experimenting with tools and methods; the process outlined below is a mere reflection of our early thinking on the design and structure of our qualitative measurement of organisational routines and dynamic capabilities. The choice and design of our instruments, and their particular configurations, must be iteratively built on and continually updated in concert with our evolving conceptualisation of dynamic capabilities. Additionally, this measurement should not be interpreted as the Public Sector Capabilities Index itself. Instead, it is being designed as a key component of the Public Sector Capabilities Index’s assessment, typification and recommendations framework.

Module 1: organisational routines

Surveys may be a similarly suitable instrument for the measurement of organisational routines for the Public Sector Capabilities Index and could be effective in reflecting the tangible day-to-day practices of city governments, i.e. their activity-specific routines (e.g. financial management and budgeting routines; is the city government capable of mobilizing available funds?). Organisational routines are not inconstant or tacit in the manner that dynamic capabilities are and so are likely to be amenable to measurement through the assessment of objective practices and functions (tasks), including assessment of whether these are in fact present.

We advance the suggestion that a city government can be considered to possess a practice if it meets a set of objectively defined criteria (e.g. ‘the city has published at least one dataset that conforms to a civic data standard such as General Transit Feed Specification). Considering the specificity of the concrete routines and practices we seek to identify, we propose that observation of organisational routines be contextualised by activity-based modules rooted in tasks – sets of practices logically bundled around a function (a ‘data module’ would then consist of practices around data management and tools, etc.).

Module 2: perceptions

While we can grasp a sense of capabilities through verifiable routines, it is also clear that there is more to it than that. Equally important are the subjective aspects of organisational culture and practices. Those cannot be verified through criteria, but are potentially revealed by city workers’ perceptions.

We introduce a second module of our measurement of dynamic capabilities with a subjective, perceptions-based survey instrument aimed at drawing out specific abilities embedded in routines. Box 1 describes a potential experimental design for such measurements.

Box 1. A potential experimental design

A select number of leaders within a city government complete the survey -> respondents are weighted, individual responses to questions are aggregated, and weighted average is calculated > questions are weighted and aggregated to provide a composite score for distinct dynamic capabilities.

Importantly, this design, which is aimed at leaders within city governments and relies on deep engagement (e.g. through the completion of a case study), is contingent on strong executive buy-in. Willingness to engage, which is discussed in the later section, is thus crucial; this is captured in the city typology, prior to the deployment of further qualitative instruments. High willingness to engage should reflect strong executive buy-in, and this should be considered a *sine qua non* of the deployment of this experimental design.

To ensure that they have oversight of dynamic capabilities, respondents should ideally be responsible for the delivery of programme priorities within sections of city government and should oversee the actual implementation of activities within our bundles of routines and linked dynamic capabilities. For example, a Head of City Procurement could be mapped to policy planning, budgeting and procurement routines, and so to seizing and shaping dynamic capabilities.

If this design is adopted, questions, and their contingent response options, which articulate low-order routines, will be mapped to high-order routines. For example, the question ‘How good is your city at spotting new challenges?’ and response options a) ‘The city has repeatedly acted too late in identifying emerging challenges’, b) ‘The city has mixed success in spotting new challenges, and c) ‘The city has a proven track record in identifying emerging challenges’ seek to evaluate sense-making (high order) and analytical thinking to discern potential opportunities (low order).

QUESTION	RESPONSE OPTIONS
Q1: How capable is your organisation at setting strategic priorities?	<p>The city mostly engages in reactive-mode decision-making.</p> <p>There are some strategic priorities, but they are not widely understood.</p> <p>The city has a clear strategic vision which is widely communicated and understood.</p>
Q2: How good is your city at spotting new challenges?	<p>The city has repeatedly acted too late in identifying emerging challenges.</p> <p>The city has mixed success in spotting new challenges.</p> <p>The city has a proven track record in identifying emerging challenges.</p>

The questions are ordinal – the response options will be coded from 1 to 5. In practice, this may not be linear, but distances between response options will be regarded as equal for the purposes of the following example:

City A has three respondents: mayor (R1), chief innovation officer (R2), and deputy mayor for communities and justice (R3). We observe these responses:

R1: Q1 (3) and Q2 (2)

R2: Q1 (5) and Q2 (5)

R3: Q1 (1) and Q2 (3)

First, responses are aggregated per question. Respondent weights are influenced by various factors (e.g. perceived proximity to the high-order routine in question). R1 and R3 are assigned a weight of 1, and R2 is assigned a weight of 0.5. Second, the weighted average for each question is calculated:

$$Q1=3 \times 1 + 5 \times 0.5 + 3 \times 1 + 1 + 0.5 = 3.4 \quad Q1=3 \times 1 + 5 \times 0.5 + 3 \times 1 + 1 + 0.5 = 3.4$$

$$Q2=2 \times 1 + 5 \times 0.5 + 3 \times 1 + 1 + 0.5 = 3 \quad Q2=2 \times 1 + 5 \times 0.5 + 3 \times 1 + 1 + 0.5 = 3$$

Both questions now have a score. Third, Q1 and Q2 must be weighted; if Q1 is of more importance to sense-making in cities, then this comparatively large contribution must be emphasised. Q1 is thus assigned a weight of 0.7 and Q2 a weight of 0.3:

$$3.4 \times 0.7 + 3 \times 0.3 = 3.28 \quad 3.4 \times 0.7 + 3 \times 0.3 = 3.28$$

Finally, sense-making dynamic capabilities in City A receive a score of 3.28, from which further implications can be drawn.

Module 3: revealed state capabilities indicators

Our measurements may be supplemented by a set of indicators that can be interpreted as proxies for various capabilities. The list of relevant indicators is still under development.

The indicator module fills out two roles in our measurement approach: i) it expands the dimensions of capacities and capabilities explored by our assessment tool; and ii) it does so by leveraging other measures of state capacity based on data previously collected, systematised and processed. This brings the Public Sector Capabilities Index closer to its ambition of integrating other indexes and evaluation frameworks, instead of competing with them.

Factorial experiment

Further, we are considering the deployment of a factorial/vignette experiment that experimentally varies attributes of interest in hypothetical situations (Stantcheva 2023). Dynamic capabilities, being conceptually rooted in change and renewal in evolving strategic environments, are particularly well-suited to measurement through the analysis of hypothetical decision-making in scenarios with varied factors. In fact, vignette experiments encourage a level of enhanced experimental realism (Aguinis and Bradley 2014) that may be effective in drawing out robust evidence of the abilities embedded in routines. This realism, and thus external validity, can be further strengthened by closing the gap between experimental and natural settings (Aguinis and Bradley 2014; Taylor 2006).

Taylor's (2006) interpretation of Jasso's (1988) findings on interrespondent dissensus implies that vignettes can circumvent organisational pressures to respond with the 'right' answers. While external validity remains a pertinent concern, Stantcheva (2023, p.45) notes the findings of Hainmueller et al. (2015) that conjoint and vignette designs perform well in predicting real-world voting behaviours in Switzerland, suggesting that these designs may 'lead to higher engagement, increase immersion, and reduce satisficing.' This strand presents promising prospects for the measurement of dynamic capabilities, but requires further development. However, such an approach is also highly demanding for city governments and officials, and might thus be less suited for widely adopted and used assessments.

5. City government typology: why we developed it and how we will use it

Our ambition is for the Public Sector Capabilities Index to be a global measure of capabilities across city government contexts. However, we also understand that cities globally vary across a range of governance, societal and economic factors. We have started to develop a city governments typology to categorise cities (see Puttick, Fernandez-Monge and Kattel,2024).

To date, we have identified seven city typologies with a focus on different dimensions: Executive power (Bäck 2005); Informal and formal governance (Mouritzen and Svava 2002); Modes of urban governance (Pierre 1999); Economic advancement (Macomber 2016); Economic activities and jobs (Lember, Kalvet and Kattel 2011); Knowledge economy (Van Winden, van den Berg and Pol 2007); and Executive leadership (Heinelt and Hlepas 2006). However, we could not repurpose these typologies for the Public Sector Capabilities Index as there was not one that combined governance, societal and economic factors. Furthermore, most of them were focused on advanced economies in Europe and USA. Therefore, drawing from existing typologies as well as augmenting them, we have produced following typology of cities (Puttick, Fernandez-Monge and Kattel 2024).

Table 3. Typology of city governments

VARIABLE	HOW IT WILL BE MEASURED	WHY WE NEED IT
Leadership	Weak/strong mayor	To consider different leadership and governance arrangements
Size of city	Population	To engage city governments of differing sizes
Global spread	Global south versus global north	To ensure geographic spread and that global views are incorporated
	Continental spread across Europe, Asia, Africa, South America and North America	
Capital city	Yes/no	To ensure cities with primary and secondary status are engaged
Socio-economic status of country	A range of countries categorised as: <ul style="list-style-type: none"> ▪ Low income (LIC) ▪ Low-middle income (LMIC) ▪ Upper middle income (UMIC) ▪ High income country (HIC) 	To consider the wider economic status of the country in which the city government is based
Legacy city	Yes/no	To identify cities that have experienced both economic and population decline over the past two centuries
Fiscal autonomy	Percentage of their budget that comes from their own resources	To identify the degree of control over spending and investment in capacity and capability building
Willingness to engage	Whether they are willing to participate in our research	Desk research can only get us so far – we require city governments to engage with us and our research if we are to understand their work

We will continue to iteratively and inductively develop the city government typology based on our engagement with cities and city practitioners.

We intend to further refine and use this city governments typology in the following ways:

- To ensure we have a robust and representative global sample of city governments. For example, in the next phase of research, we are

specifically looking at engaging with more cities in the global south, such as Dhaka and Surat, as well as engaging with non-legacy cities, such as Brasilia.

- Once we have established the dynamic capabilities and how to measure them, we could use the maturity of deploying dynamic capabilities as the basis for grouping different types of city governments.
- As we implement the Public Sector Capabilities Index, the typology could aid city governments in the identification of peer cities for cross-learning.

6. Usability of a Public Sector Capabilities Index

Through our interviews and five city government case studies, we explored both the need and usefulness of a new Public Sector Capabilities Index. This preliminary engagement revealed considerable interest from city governments around the world for a tool to help them reassess their ways of working and strengthen their ability to deliver against current societal challenges.

At the same time, it also revealed what would make such tool useful to them. In summary, these lessons are:

- **Provide detailed and actionable insights:** To offer context-specific recommendations to help city governments develop road maps for capability enhancement, including qualitative insights to provide nuanced, actionable information.
- **Co-design with local governments:** Ensure political and administrative buy-in through co-design processes that maximise local city government's ownership of the Public Sector Capabilities Index and to tailor the index to fit the specific needs of each city as much as possible.
- **Ensure its accessibility:** Design the Public Sector Capabilities Index to make it easy to access, interpret and use by local government officials, and ensure that the performance data is communicated to help persuade and engage wider support from stakeholders and funders.
- **Avoid ranking:** Go beyond simplistic ranking systems that focus only on competition and instead potentially use performance maturity models that provide a road map for improvement.
- **Focus on learning and hands-on application:** Position the Public Sector Capabilities Index as a tool for learning rather than just an assessment. Include practical, experiential learning components to make the insights derived from the Public Sector Capabilities Index actionable.
- **Support external collaboration and investment:** Facilitate external partnerships and attract investment by showcasing data and performance, and sharing case studies and approaches to help cities learn from each other.

- **Ensure transparency and address biases against usage:** Be transparent on potential measurement biases and ensure the Public Sector Capabilities Index is globally balanced.
- **Identify a clear narrative for its value proposition:** Clearly communicate the benefits and value proposition of the Public Sector Capabilities Index to city officials so that they want to engage. This could include demonstrating the key practical benefits, such as improved hiring practices, upskilling and resource optimisation.
- **Embed continuous reflection and adaptation in the Public Sector Capabilities Index management:** Perform a regular assessment of the Public Sector Capabilities Index's impact to identify and tackle unforeseen consequences, and to adapt to ongoing feedback and changing needs.

Over the past few months, we have held knowledge-exchange workshops with organisations that developed capacity assessment schemes. To date, we have engaged with Results4America, developers of the [What Works Cities](#) certification programme in partnership with Bloomberg Philanthropies; the [Global Cities Hub](#) in Geneva; and the [Public Sector Innovation Index](#), developed by the Government Laboratory and the Inter-American Development Bank.

These knowledge exchange sessions have provided the following insights:

- **Generalisability versus contextualisation.** A singular index may require a level of generalisability to develop shared indicators, but this must be balanced with contextualised measurement and support to ensure global relevance. The city typology could be an important means of clustering cities according to contextual features.
- **Measurement challenges.** Many indexes conduct assessments by identifying criteria and associated indicators to measure. However, some capabilities can be hard to measure with quantitative or even qualitative data, so proxies or associated outcomes will need to be developed.
- **Incentives for use.** Given city government officials are under considerable time and resource pressures, the value proposition and incentive for using the index should be clear, accessible and avoid overburdening resources. For instance, it could be tied to existing processes and strategies in city governments, such as personnel

development, recruitment and funding acquisition to maximise utility and reduce adoption barriers.

- **Risks of indexes.** Indexes can have connotations of being competitive, normative and static. This can make them susceptible to either being ignored, encouraging a culture of 'naming and shaming' or creating unhelpful competition and gaming. The design of the Public Sector Capabilities Index should be careful to avoid such risks and negative associations.
- **Learning from measurement.** Measurement should have a formative impact and thus be accompanied by support and development mechanisms to help cities develop the identified capabilities. Peer-to-peer networks, recommendations for improvement and training provisions are some examples of current approaches to this.
- **Potential to attract investment.** A possible use case for the index is to help city government officials attract investment from central government funds or philanthropic donors by identifying areas where capacity support is needed.

7. Reflections and implications for our work

By grounding the theoretical conceptualisations of dynamic capabilities in five city government settings, we offer insight into their development and deployment in practice. The diversity in the implementation of dynamic capabilities across cities, and between departments within the same city, affirmed the need for a framework to codify and measure dynamic capabilities to accelerate their development.

Shared language

A successful Public Sector Capabilities Index must be rooted in the vernacular and practices of city government officials, so that it is relatable and widely adopted. The case studies have shown that today many officials use terms like 'skills', 'processes' and 'attitudes' when referring to capabilities, departing from the terminology presented to them in the theoretical conceptualisation. Furthermore, often capabilities may not be tangible or visible and will require identification of associated processes, outputs or organisational structures. In many cases, the Public Sector Capabilities Index will therefore need to develop proxies and indicators for identifying and measuring capabilities. With the help of civil servants, we seek to refine the terminology of dynamic capabilities into an everyday vocabulary, establishing clear links between practices and theoretical concepts. Doing so underpins effective measurement of dynamic capabilities.

City government engagement

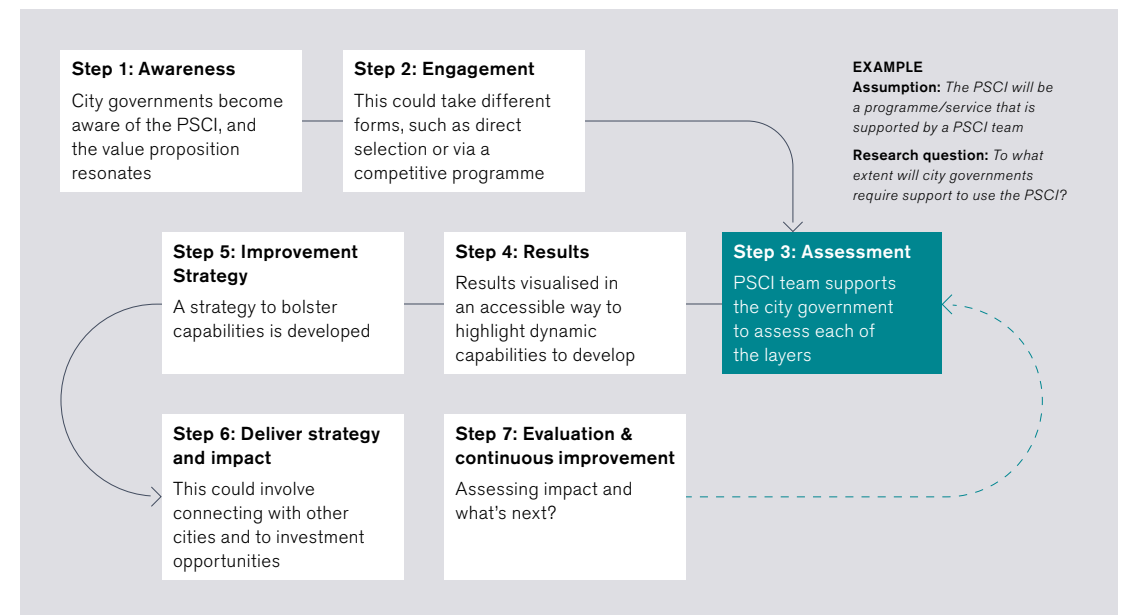
Our research, particularly the lack of engagement with officials in Seoul Metropolitan Government, identifies challenges for city government engagement. A lack of traction impacts the composition of our city government sample and our ability to test and refine the index. The ability to engage with city officials is essential if we are to create a robust Public Sector Capabilities Index and engagement will also be crucial to ensuring that the index is used.

Co-design with users

To leap from the concepts of dynamic capabilities to an index that enhances the impact of city governments calls for co-design with its intended users. In the upcoming research phase, we will gather further primary research through engagement with city governments, and with the national governments and external funders (e.g. treasuries, donors, development banks) who shape the development of dynamic capabilities through resource allocation.

The insight gathered so far poses many design challenges for the next phase of work. Each will steer the engagement and the co-design processes. These design challenges align with the steps in a city government official's user journey and can also be adapted to address the needs of national governments and external funders (see Figure 1).

Figure 1. The current hypothesis of the Public Sector Capabilities Index (PSCI) user journey for a city government official



By articulating the Public Sector Capabilities Index as a set of sequential steps we reveal embedded assumptions and spark new research questions. Unpacking each step of the journey helps validate and refine the key steps and their sequence. As officials' experience the index, it is crucial to consider the underlying structures that will support its delivery and maintenance.

To help us unpack each step, we pose a series of questions:

▪ **Step 1: Awareness**

- How can we ensure the index is well-known among city government officials and investors, and it is clear how to get involved?
- How can we leverage the existing networks and communication channels to promote the index?

▪ **Step 2: Engagement**

- How can we motivate and support city government officials and investors to apply the index to decision-making?
- How can city government officials connect with and initiate the use of the index?
- How can we embed the index in the routines of city government officials and investors?
- How can we equip national governments and external funders to take strategic investments in city governments who need to strengthen their dynamic capabilities?

▪ **Step 3: Assessment**

- How can we enable city governments to assess their dynamic capabilities, for the first time and on an ongoing basis?
- How can we ensure the assessment process is achievable, comparable, factual and repeatable?
- How can we support city governments throughout the assessment process?
- How can the assessment be streamlined by existing and easy-to-access data sources?
- How can we ensure that the index enables cities to identify what dynamic capabilities are and where improvements can be made, without imposing a singular and western-centred idea of what good looks like?

▪ **Step 4: Results**

- How can we communicate the results in an actionable manner?
- How can data visualisations and online tools support communication?

▪ **Step 5: Improvement strategy**

- How can we ensure recommendations for improving dynamic capabilities are implementable?
- How can we ensure recommendations are contextually relevant and useful?
- How can we identify cities with common characteristics or shared challenges to enable peer-to-peer learning?

▪ **Step 6: Delivery strategy and impact**

- How can we support city governments to act on the recommendations, independently and through external collaborations?
- How can we assist city governments to make the case for investment in dynamic capabilities?

▪ **Step 7: Evaluation and continuous improvement**

- How can we enable cities to track their progress?
- How can we help city governments to demonstrate the impact of investment in dynamic capabilities?
- How can we foster learning spaces that encourage participants to share lessons candidly?
- How can we build a community of practice which is invested in and advocates for the index?

Engagement will focus on co-designing a useful and usable Public Sector Capabilities Index. Drawing upon strategic design and service design methods, this will focus on target audiences, inform a robust value proposition, design the end-to-end user journey, and shape a repeatable measurement approach that ingests both qualitative and quantitative data. Emerging insight will progressively sharpen our understanding of dynamic capabilities.

Annex 1: Our methodological approach

The development of the Public Sector Capabilities Index is divided into distinct phases. This report covers the research we undertook from September 2023 to May 2024. To date, our research has taken an abductive and interpretivist approach to understanding the dynamic capabilities of city governments. The methods deployed have included academic and grey literature reviews, and qualitative interviews with city government officials, academics and wider experts.

Literature review

When the project began in September 2023, we conducted a literature review to explore the academic debates surrounding dynamic capabilities in the public sector. This literature review drew upon the extant literature on strategic management (for example see Teece et al. 1997; Wolfram 2016; Meijer 2019; Mayne et al. 2020; Kattel 2022; Spanó et al. 2023). We also analysed previous research undertaken by the Institute for Innovation and Public Policy (IIPP) and drew on our own research and practical experience of dynamic capabilities.

We also reviewed the academic and grey literature to better understand the usefulness and usability of government frameworks, toolkits and indexes. We conducted a search of academic articles and practitioner frameworks in key databases, such as Google Scholar and the collection of our University's Library catalogue. The terms that guided our search were: 'capacity' and 'capability' with either 'toolkit', 'framework' and 'index', along with one or more of the following terms: 'government', 'public', 'public sector' or 'public-sector'. We analysed 54 such schemes and the findings have been written up into a working paper (see Puttick 2024). This has helped us to develop our first conceptualisation of state capacity, organisational routines and dynamic capabilities in the public sector (see Kattel, et al. 2024).

Primary research with city governments

Between December 2023 and May 2024, we tested and developed our initial conceptualisation of dynamic capabilities through case study research on five city governments. The five city governments we case studied were:

Bogotá City Council, Freetown City Council, Barcelona City Council, Seoul Metropolitan Government and Seattle City Council.

The five city governments were chosen to provide geographic distribution, representation from the global south, variation in levels of socio-economic development, the presence of an elected mayor and demonstrable deployment of dynamic capabilities. See Table 1.

Table 1. City government case study selection criteria

CITY	GEOGRAPHY	SOCIO-ECONOMIC LEVEL	GLOBAL SOUTH VERSUS GLOBAL NORTH	LEADERSHIP MODEL	DEMONSTRABLE DEPLOYMENT OF DYNAMIC CAPABILITIES
Bogotá City Council	South America	Low-middle income country	Global south	Elected mayor	✓
Freetown City Council	Africa	Upper-middle income country	Global south	Elected mayor	✓
Barcelona City Council	Europe	High-income country	Global north	Elected mayor	✓
Seoul Metropolitan Government	Asia	High-income country	Global north	Elected mayor	✓
Seattle City Council	North America	High-income country	Global north	Elected mayor	✓

The city government case study research has included both primary and secondary data. We conducted semi-structured, qualitative interviews with city government officials and wider experts who understand and can comment on how city government operates. We also reviewed secondary materials to triangulate and contextualise our findings. We have subsequently developed five city case studies analysing how dynamic capabilities are conceptualised, deployed and developed in each context.

For each city government, we conducted approximately five qualitative interviews, using the same interview question guide. The officials interviewed occupy leadership, innovation and strategy roles, including mayoral office representatives, chief administrative officers, innovation managers and data analysts. We also reviewed secondary materials, both academic and policy

sources, and interviewed external organisations operating in the region to triangulate and contextualise the interview data. In the case of Seoul Metropolitan Council, we were not able to secure interviews so developed the case study based on a review and analysis of secondary materials in Korean and English.

We analysed data on the five city governments to understand the city context and challenges, assessment of existing capabilities, development of dynamic capabilities and usability of an index. These case studies are instrumental to developing our conceptual framework for understanding dynamic capabilities in city governments and for shaping future phases of work on the Public Sector Capabilities Index.

Wider expert engagement

Alongside the city case studies, we have broadened and developed our conceptualisations of city government dynamic capabilities by engaging experts and wider input into how capacity and capabilities are deployed. This includes:

- Convening the Public Sector Capabilities Index Advisory Board with expert representatives from academia, philanthropy and government.
- Conducting interviews to help engage experts and key organisations in public sector capacity, index development and city administration.
- Knowledge exchange workshops with organisations that have already developed capacity assessment schemes.
- Regularly blogging and publishing reports to publicly share and solicit feedback on emerging findings.
- Hosting open, free-to-join monthly conference calls to discuss the progress and development of the Public Sector Capabilities Index.

To reflect upon these insights, we hold regular internal workshops. This has refined our conceptualisation of dynamic capabilities and helped shape our work, including leading to the development of our forthcoming theory of change and value proposition.

Bibliography

- Aguinis, H. and Bradley, K. J. (2014). Best practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational Research Methods*, 17(4), 351-371.
- Bäck, H. (2005). The institutional setting of local political leadership and community involvement, in: Haus, M. / Heinelt, H. / Stewart, M. (eds.) (2005). *Urban Governance and Democracy. Leadership and Community Involvement*, London: 65-101.
- Becker, M. C. (Ed.). (2008). *Handbook of Organizational Routines*. Edward Elgar Publishing.
- Borrás, S. et al. (2023). *The Transformative Capacity of Public Sector Organizations in Sustainability Transitions: A Conceptualization*. Working paper 2023/2. CIRCLE – Centre for Innovation Research: Lund University. Available at: http://wp.circle.lu.se/upload/CIRCLE/workingpapers/202302_borras.pdf.
- Cingolani, L. (2018). The role of state capacity in development studies. *Journal of Development Perspectives*, 2(1-2), 88-114.
- Hainmueller, J., Hangartner, D. and Yamamoto, T. (2015). Validating vignette and conjoint survey experiments against real-world behavior. *Proceedings of the National Academy of Sciences*, 112(8), 2395-2400.
- Heinelt, H., Hlepas, NK. (2006). Typologies of Local Government Systems. In: Bäck, H., Heinelt, H., Magnier, A. (eds) *The European Mayor*. VS Verlag für Sozialwissenschaften. https://doi-org.libproxy.ucl.ac.uk/10.1007/978-3-531-90005-6_2Jasso, G. (1988). Whom shall we welcome? Elite judgments of the criteria for the selection of immigrants. *American Sociological Review*, 919-932.
- Laaksonen, O. and Peltoniemi, M. (2018). The essence of dynamic capabilities and their measurement. *International Journal of Management Reviews*, 20(2), 184-205.
- Mayne, Q., de Jong, J. and Fernandez-Monge, F. (2020). State Capabilities for Problem-Oriented Governance. *Perspectives on Public Management and Governance*, 3(1), pp. 33-44. Available at: <https://doi.org/10.1093/ppmgov/gvz023>.
- Meijer, A. (2019). Public Innovation Capacity: Developing and Testing a Self-Assessment Survey Instrument. *International Journal of Public Administration*, 42(8), pp. 617-627. Available at: <https://doi.org/10.1080/01900692.2018.1498102>.
- Kattel, R., Mazzucato, M., Collington, R., Fernandez-Monge, F., Gronchi, I. and Puttick, R. (2024). Public sector capacity matters, but what is it? 1 March 2024. Available at: <https://medium.com/iipp-blog/public-sector-capacity-matters-but-what-is-it-ff1f8332bc34>.
- Kattel, R. (2022). Dynamic capabilities of the public sector: Towards a new synthesis. UCL Institute for Innovation and Public Purpose. Available at: <https://www.ucl.ac.uk/bartlett/public-purpose/publications/2022/mar/dynamic-capabilities-public-sector-towards-new-synthesis>.
- Kattel, R., Drechsler, W. and Karo, E. (2022). *How to Make an Entrepreneurial State: Why Innovation Needs Bureaucracy*. Yale University Press.
- Kattel, R. and Takala, V. (2021). Dynamic capabilities in the public sector: The case of the UK's Government Digital Service. Available at: <https://www.ucl.ac.uk/bartlett/public-purpose/publications/2021/jan/dynamic-capabilities-public-sector-case-uks-government-digital-service>.
- Lember, V., Kalvet, T., & Kattel, R. (2011). Urban Competitiveness and Public Procurement for Innovation. *Urban Studies*, 48(7), 1373-1395. <https://doi.org/10.1177/0042098010374512>
- Macomber, J. (2016) *The 4 Types of Cities and How to Prepare Them for the Future*. Harvard Business Review. <https://hbr.org/2016/01/the-4-types-of-cities-and-how-to-prepare-them-for-the-future>
- Mouritzen, P. E. and Svava, J. H. (2002). Leadership at the apex. Politicians and administrators in western local governments, Pittsburgh.
- Pierre, J. (1999). Models of Urban Governance: The Institutional Dimension of Urban Politics. *Urban Affairs Review*, 34(3), 372-396. <https://doi.org/10.1177/10780879922183988>
- Puttick, R. (2024). The landscape of public sector capacity and capability frameworks, toolkits and indexes: What they do and what we can

learn. UCL Institute for Innovation and Public Purpose, Policy Report 2024/02. Available at: <https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/mar/public-sector-capacity-and-capability-frameworks-toolkits-indexes>.

- Puttick, R., Monge, F. and Kattel, R. (2024). Creating a typology of city governments to measure their capabilities. Available at: <https://medium.com/iipp-blog/creating-a-typology-of-city-governments-to-measure-their-capabilities-1b6e90d737b9>
- Spanó, E. et al. (2023). Legal–institutional design and dynamic capabilities for mission-oriented innovation agencies: a new framework. *Science and Public Policy*, p. scad060. Available at: <https://doi.org/10.1093/scipol/scad060>.
- Stantcheva, S. (2023). How to run surveys: A guide to creating your own identifying variation and revealing the invisible. *Annual Review of Economics*, 15, 205-234.
- Taylor, B. J. (2006). Factorial surveys: Using vignettes to study professional judgement. *British Journal of Social Work*, 36(7), 1187-1207.
- Teece, D.J., Pisano, G. and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), pp. 509–533. Available at: [https://doi.org/10.1002/\(SIC\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](https://doi.org/10.1002/(SIC)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z).
- Vaccaro, A. (2023). Measures of state capacity: so similar, yet so different. *Quality & Quantity*, 57(3), 2281-2302.
- van Winden, W., van den Berg, L., & Pol, P. (2007). European Cities in the Knowledge Economy: Towards a Typology. *Urban Studies*, 44(3), 525–549. <http://www.jstor.org/stable/43084357>
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology* (Vol. 1). University of California Press.
- Wolfram, M. (2016). Conceptualizing urban transformative capacity: A framework for research and policy. *Cities*, 51, pp. 121–130. Available at: <https://doi.org/10.1016/j.cities.2015.11.011>.

